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METHOD FOR ASPHALT COMPACTION AND COMPACTION APPARATUS

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a method for the compaction of asphalt and a compaction apparatus. More particularly, the present invention relates to a method and apparatus for compacting hot mix asphalt under conditions which advantageously optimize binder flow within the asphalt during compaction.

Description of the Related Art

By the term "binder" as used throughout this specification is meant any thermoplastic visco-elastic material which may be used in hot mix asphalts. Generally the binder will be bitumen or bituminous, that is a bitumen incorporating, for example polymeric modifiers. It is also known for hot mix asphalt to incorporate polymer binders with no bitumen based binders present, and the present invention extends to the compaction of all such hot mix asphalts.

Inherent in modern asphalt mix design for heavy duty applications is the use of components (aggregates and binders) which are purposely selected to resist compaction and loss of shape under heavy traffic. These properties will generally hinder the achievement of the desired compaction during laying of the asphalt.

The principal asphalt mix design element to resist compaction under heavy traffic is the use of aggregates with extremely rugose texture and cuboid shape, aimed at providing high shear resistance within the aggregate skeleton. In simple terms the objective is to ensure the physical properties of the aggregate inhibit particle movement and promote "lock up" in the structure under the applied load stress in operation. Stiffer binders such as polymer modified binders are increasingly being used to augment both the shear strength of the mix and also to improve the flexural or fatigue properties of the mix.